

Correspondence

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Ammonia Attacks

SIR,—As the surgeons in charge of admissions on the day that a local branch of the National Provincial Bank was raided we were responsible for receiving and treating a member of the staff who had been attacked with ammonia by the raiding gang. This man not only had ammonia thrown in both eyes but also up his nose and down his throat, and for good measure he was hit, though not too seriously, on the back of the head. Before he came to the Sussex Eye Hospital he had had some first-aid treatment at the bank, including irrigation of the eyes. He was then taken to the Royal Sussex County Hospital, where the scalp wound was sutured, and was then transferred to the Sussex Eye Hospital for treatment to his eyes.

Only after he was admitted to the Sussex Eye Hospital was it apparent that oedema of the nasopharynx and glottis was producing an embarrassment to breathing and swallowing and ammonia burns of the face, eyes, and mouth were causing great distress and also shock. The patient was soon unable to swallow his own saliva, and any form of normal feeding was out of the question. Moreover inhalation of ammonia fumes had affected the trachea and lungs and produced a low-grade chemical pneumonia. During the ensuing days he was treated by intravenous hydrocortisone hemisuccinate in saline and dextrose drips, and local treatment of the eyes included variously atropine, sulphacetamide, and drops of betamethasone. The pain and anxiety were controlled with paracetamol and chlordiazepoxide.

During the week after admission the condition of the throat and trachea slowly cleared; swallowing became possible again after a few days. The right eye (the less badly injured) recovered unexpectedly well with no corneal staining after four days, but the left has been damaged, probably irreparably. From the moment when it was possible to examine the eyes properly the left showed gross chemosis, corneal staining with an oval and non-reacting pupil, and pigment on the anterior lens capsule. There was an intensive uveitis with aqueous flare and cells but with a low tension. The condition of the left eye has persisted. Three weeks after the incident

the vision is little more than hand movements, the cornea no longer stains but it is hazy with oedema, there are stromal opacities and numerous folds in Descemet's membrane; there is much pigment on the posterior corneal surface and there is persistent uveitis. The tension is if anything becoming softer and perusal of the literature confirms that the final outlook for this eye is not hopeful.

We think it important to draw attention to several facts about ammonia attack which may not be generally known. The first is that oedema of the glottis does not come on at once but tends to develop several hours after the injury; this may give a false impression of the severity of the damage and delay adequate treatment. The second is the grave injury caused to the eyes. Ammonia is absorbed with great rapidity through the cornea and induces an irreversible chemical reaction leading to loss of sight and destruction of the eye. Thirdly, it is vital that first aid should be given at once. The only form likely to help at all is instant copious irrigation of the injured eye with running water from a tap (clothes regardless). Finally, as this form of attack seems to be on the increase, and as it is obviously too much to hope that a knowledge of the grievous damage inflicted will in any way curb the use of ammonia by bank robbers, we would stress the urgent need to provide really adequate protection for bank servants in the execution of their duties.—We are, etc.,

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Infection Risks of Haemodialysis

SIR,—The recent report to the Public Health Laboratory Service by the Working Party on Haemodialysis Units (24 August, p. 454) discussed the sources of risk to laboratory staff in general terms without formulating a detailed code of laboratory practice. It considered that plastic bags were of doubtful value for the transport of

specimens. In this department great reliance is placed on the use of bags, and our system may be of interest to others.

A gloved member of the dialysis unit staff takes blood for biochemical estimations into a plastic container with press-on cap, which is then placed on a tray. Another member of staff places the container with forceps into an individual plastic resealable bag (8 in. x 3 in.: 20 cm. x 7.5 cm.), and the bag is taken to the laboratory together with an accompanying request card marked with a distinctive flash. The container is centrifuged while still in the unopened bag. For automated analysis the plasma is transferred directly to the sample cup by a gloved operator, who removes the cap by handling through the bag wall and then opens the top of the bag to introduce a Pasteur pipette. The container is recapped through the wall of the bag and the pipette with its teat and the discarded gloves are placed in the bag, which is resealed. When manual techniques are used or the plasma is to be stored, the plasma is transferred to a labelled plastic bottle already placed inside an identical bag. The bottle is recapped through the bag, and the bag resealed until required. A syringe-pipette is used for the measurement of samples for manual analysis. All bags with their contents are finally autoclaved in the laboratory before disposal.

The blood container is thus handled only by the person who draws the sample, and subsequently never leaves the bag. The hazards of breakage and aerosol contamination during centrifugation are removed, although a slight aerosol risk is present when the bags are opened.

We have handled over 2,000 blood specimens in bags in the past year. The method is practicable and not unduly time-consuming, and enables specimens from the dialysis unit to be included in routine batches. During this period only two containers have broken, but the bags have retained the contents, which could still be estimated. The screw-cap is intrinsically safer than the press-on cap but cannot be conveniently manipulated through the bag.—We are, etc.,

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